

Remarks & Arguments

In the Office Action, the Examiner noted that Claims 32-39, 41, 42, 45-65, 67-71, 73 and 74 are pending in the application, that Claim 32-38, 41, 47-62, 68 and 74 are withdrawn, and that Claims 39, 42, 45, 46, 63-65, 69-71 and 73 are rejected. By this amendment, Claims 69, 71 and 74 have been amended, Claim 32-39, 41, 42, 45-65, 67, 68 and 70 have been canceled, and Claims 75-86 have been added. Thus, Claims 69, 71 and 73-86 are pending in the application. The amendments to the specification and claims do not add new matter to the application. The Examiner's rejections are traversed below.

*Objection to the Specification*

The specification is objected to as allegedly failing to provide proper antecedent basis for the claimed subject matter. The rejection is rendered moot in view of the amendments to the claims.

*Claim Objection*

Claims 45, 46 and 67 are objected to for failing to further limit the subject matter of a previous claim. Claims 45, 46 and 67 have been canceled, rendering the objection thereto moot.

*Rejections Under 35 U.S.C. 112, First Paragraph*

Claims 39, 42-46, 63-65, 69-71 and 73 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description. The rejection is rendered moot in view of the amendments to the claims.

*Rejections Under 35 U.S.C. 102*

Claims 69 and 71 stand rejected under 35 U.S.C. 102 as being anticipated by U.S. Patent No. 5,508,549 to Watanabe. It is well settled that in order to establish a *prima facie* case of anticipation the Examiner must show by a preponderance of the evidence that the relied upon reference teaches or discloses each of the claimed elements expressly or inherently as interpreted by one of ordinary skill in the art (MPEP 2131).

**Claim 69**, as amended, recites “a deep well of a second conductivity type disposed between said one or more wells of said first conductivity type and a substrate of said first conductivity type, wherein said deep well includes a plurality of substructures having a plurality of gaps between each of said one or more wells of said first conductivity type and said substrate of said first conductivity type, wherein said one or more wells of said first conductivity type are coupled to said substrate through said plurality of gaps, and wherein said substructures form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and

“said substrate.” In contrast, Watanabe does not teach or disclose that the alleged substructures of the buried region 2 “form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate.”

Applicants therefore respectfully submit that Claim 69, as amended, is patentable over Watanabe. In addition, Applicants submit that **Claim 71** is allowable by virtue of its dependency on Claim 69, as well as the additional elements it recites. Accordingly, Applicants respectfully request that the anticipation rejection of Claims 69 and 71 be withdrawn and that Claims 69 and 71 be allowed.

*Rejections Under 35 U.S.C. 103*

Claims 69 and 71 stand rejected under 35 U.S.C. 103 as being obvious in view of the combination of U.S. Patent No. 6,586,817 to Burr and U.S. Patent No. 5,508,549 to Watanabe.

**Claim 69**, as amended, recites “a deep well of a second conductivity type disposed between said one or more wells of said first conductivity type and a substrate of said first conductivity type, wherein said deep well includes a plurality of substructures having a plurality of gaps between each of said one or more wells of said first conductivity type and said substrate of said first conductivity type, wherein said one or more wells of said first conductivity type are coupled to said substrate through said plurality of gaps, and wherein said substructures form a depletion region between said deep well and said substrate having a specified amount of

decoupling capacitance for a principal operating potential coupled between said deep well and said substrate.” In contrast, Watanabe does not teach or suggest that the alleged substructures of the buried region 2 “form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate.” Likewise, Burr does not teach or suggest that the alleged substructures of the perforated buried N-well 770 “form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate.”

For each of the reasons set forth above, Applicants respectfully submit that Claim 69, as amended, is patentable over Burr in view of Watanabe. In addition, **Claim 71** is allowable by virtue of its dependency on Claim 69, as well as the additional elements it recites. Accordingly, Applicants respectfully request that the obviousness rejection of Claims 69 and 71 be withdrawn and that Claims 69 and 71 be allowed.

Claim 73 stands rejected under 35 U.S.C. 103 as being obvious in view of the combination of U.S. Patent No. 6,586,817 to Burr, U.S. Patent No. 5,508,549 to Watanabe and U.S. Patent No. 6,900,091 to Williams and the combination of Watanabe and Williams.

For each of the reasons set forth above, Applicants respectfully submit that independent Claim 69 is patentable over Watanabe and the combination of Watanabe and Burr. Williams is cited as teaching “a second deep well of said second conductivity type disposed between said

one or more additional wells of said first and second conductivity type and said substrate, wherein said one or more additional wells of said first conductivity type are isolated from said substrate by said second deep well.” Thus, Williams does not add anything to the teachings of Burr and Watanabe with reference to Claims 69. In particular, neither Burr, Watanabe nor Williams teach or suggest “wherein said substructures form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate.” Applicants therefore respectfully submit that Claim 73 is patentable over Burr, Watanabe, Williams and the combinations thereof based upon its dependency on Claim 69. Accordingly, Applicants request that the obviousness rejection of Claim 73 be withdrawn and that Claim 73 be allowed.

*Restriction Requirement*

Applicants respectfully request reconsideration of the species restriction requirement first made in the July 19, 2005 Office Action and alternatively made in the July 30, 2007 as applied to Claims 69, 71, 73 and 74. The Applicants submit that Claim 69, as amended, is generic. In particular, Claim 69 recites an integrated circuit **comprising** “... a deep well of a second conductivity type ..., wherein said deep well includes a plurality of substructures ..., and wherein said substructures form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate ...” Claim 74 recites an integrated circuit comprising

““... a deep well of a second conductivity type ..., wherein said deep well includes a plurality of substructures ..., and wherein said substructures form a depletion region between said deep well and said substrate having a specified amount of decoupling capacitance for a principal operating potential coupled between said deep well and said substrate ...” and “a third deep well of said second conductivity type ..., wherein said third deep well includes a plurality of substructures ..., and wherein said substructures of said third deep well form a depletion region between said third deep well and said substrate to provide an additional specified amount of decoupling capacitance for said principal operation potential.” Applicants also note that Claim 69 uses the transitional phrase “comprising” which is properly interpreted to as “open ended” that does not exclude the possibility of additional structures. Claim 74, which depends on Claim 69 and further limits it, recites the additional deep well structure that forms a same depletion region to increase the decoupling capacitance for a principal operating potential. Similarly, new independent Claim 77 is generic to new dependent Claims 85 and 86, which depend from Claim 77. Accordingly, the Applicants request that the restriction requirement be withdrawn with regard to Claim 69, 71 and 73-86.

*New Claims*

For each of the reasons set forth above, Applicants respectfully submit that **Claims 75 and 76** are patentable over Burr, Watanabe, Williams and the combinations thereof based upon their dependency on Claim 69.

New independent **Claim 77**, recites “a first deep well of said second conductivity type coupled to said first voltage by said first surface well, wherein said first deep well is disposed between said second surface well and said epitaxial layer, wherein said first deep well includes a plurality of sub-structures including a plurality of gaps, wherein said gaps provide connectivity between said second surface well and said epitaxial layer, and **wherein a depletion region formed between said first deep well and said surrounding second surface well and epitaxial layer provides a decoupling capacitance between said first and second voltages.**”

Wantanabe does not teach or suggest that a depletion region formed between the buried region 2 and the p well region 5 and substrate 2 provides a decoupling capacitance between a first and second voltage. Likewise, Burr does not teach or suggest a depletion region formed between the perforated buried N-well 770, the P-layer 706A and the P-substrate 706B provides a decoupling capacitance between a first and second voltage. Finally, Williams, also does not teach or suggest a depletion regions formed between the deep n-wells 152a, 154b, a surface well 154a, 154b and the substrate 151 provides a decoupling capacitance between a first and second voltage.

Applicants therefore respectfully submit that Claim 77 is patentable over Burr, Watanabe, Williams and the combinations thereof. In addition, **Claims 78-86** are allowable by virtue of their dependency on Claim 77, as well as the additional elements they recite.

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Conclusion

For all the reasons advanced above, Applicants respectfully submit that the present application is in condition for allowance and that action is earnestly solicited. The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

The Commissioner is hereby authorized to charge any additional fees, which may be required for this amendment, or credit any overpayment, to Deposit Account 504160. In the event that an extension of time is required, or may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account 504160.

Respectfully submitted,  
MURABITO, HAO & BARNES LLP

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